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# **Regional innovation policy from an evolutionary perspective**

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## structure of lecture

- 1. regional branching
- 2. mechanisms behind regional branching
- 3. regional branching and policy intervention?
- 4. mechanisms and policy actions



# 1. regional branching

- firms differ, due to firm-specific competences
- variety as key driver of regional growth: the more, the better
- knowledge will spill over to other firms and sectors now and then
- however, effective learning requires cognitive proximity between sectors
- but too much cognitive proximity may be harmful (lock-in)
- thus, some degree of cognitive proximity between sectors is needed, but not too much, to enable knowledge spillovers



# 1. regional branching

- regional level might be crucial in this respect: knowledge spillovers are often geographically bounded
- geographical proximity is an enabling factor
- thus, regions with high degree of related variety (that is, variety in sectors that are technologically related) will perform better
- strong empirical evidence (NL, Italy, Spain, Finland, GB): related variety has an additional impact on regional growth
- in the long run, related variety is also a major input for regional diversification: new industries branch out of existing industries
- **regional branching:** new industries grow out of technologically related industries, in which new firms recombine and exploit the knowledge and skills taken from local related industries



# 1. regional branching

- many case studies on regional diversification or branching, but **no systematic study**
  - **long-term analysis of 70 Swedish regions 1969-2002**
  - does the rise and fall of industries in regions depend on the degree of **technological relatedness** with existing industries in a region?
  - Neffke, F., M. Henning and R. Boschma (2009), How do regions diversify over time? Industry relatedness and the development of new growth paths in regions, *Papers in Evolutionary Economic Geography*, no. 9.16, Utrecht University
- (1) **rise of new industries**: do industries have a higher probability to enter a region when these are technologically related to pre-existing industries in a region?
  - (2) **fall of existing industries**: do industries have a lower probability to exit a region when these are technologically related to pre-existing industries in a region?



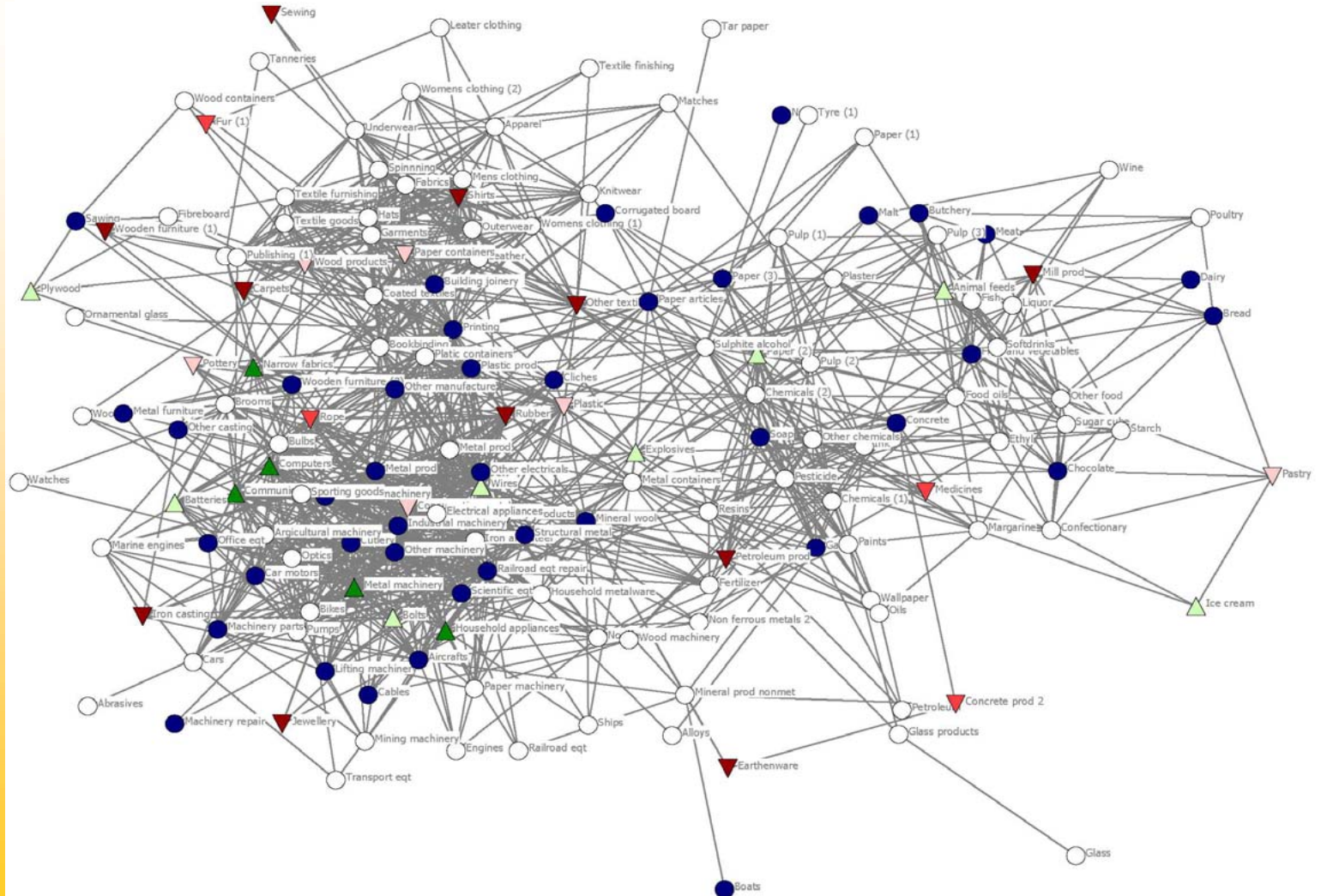
# 1. regional branching

- co-occurrence analysis: to determine the degree of technological relatedness between each pair of industries
- based on product data at the plant level in Sweden for the period 1969-2002
- about 2,500 events of an industry entering a region
- more than 3,000 events of an industry exiting a region
- main findings:
  1. Swedish regions tend to diversify by branching into new industries that are related to their current industries: path dependent process
  2. existing industries tend to disappear from a region when these are not technologically related to other existing industries in the region



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# average industry space in Sweden 1969-2002, with the evolution of the production structure of Linköping





## 2. mechanisms behind regional branching

- through which mechanisms new industries branch out of existing related industries?
- **entrepreneurship** is crucial mechanism through which regional branching occurs
- Boschma, R.A. & R. Wenting (2007), The spatial evolution of the British automobile industry: does location matter? *Industrial and Corporate Change* 16 (2), 213-238
- main findings:
  1. **experienced entrepreneurs** (with relevant knowledge from related industries like engineering, cycle and coach making) are crucial for first stage of the industry lifecycle: experienced entrepreneurs have a higher survival rate, in comparison to other types of entrepreneurs
  2. **regions with these related industries** had a higher probability to develop the new car industry: effective knowledge transfer from the old to the new requires relatedness at the regional level



## 2. mechanisms behind regional branching

- **labour mobility** may be another mechanism through which regional branching occurs
- however, this has not (yet) been investigated in the context of the industry life cycle: we have little to no understanding of whether related labour (labour recruited from related industries) impacts on the survival of firms in a newly emerging industry
- Boschma, R., R. Eriksson and U. Lindgren (2009), How does labour mobility affect the performance of plants? The importance of relatedness and geographical proximity. *Journal of Economic Geography* 9 (2), 169-190
- main findings of **Swedish labour mobility study**:
  1. inflow of new skills that are **related** to the knowledge base of the plant has a positive effect on plant performance (in contrast to inflows of identical and unrelated skills)
  2. labour mobility **across regions** has only a positive effect on plant performance when this concerns new employees with skills that are **related** (but not similar) to the existing set of skills at the plant level

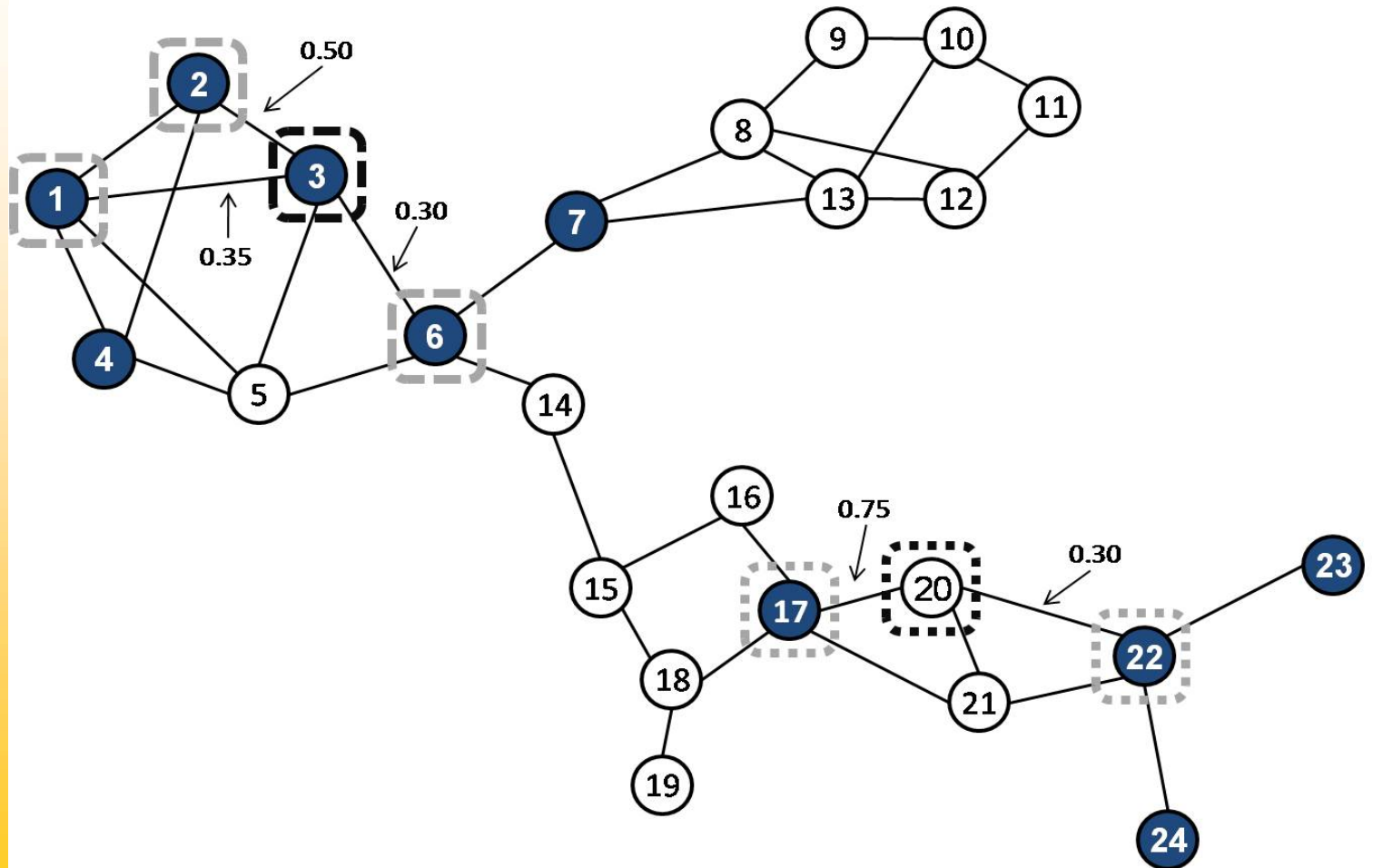


### 3. regional branching and policy intervention?

- objective of regional policy based on branching: broaden and renew the industrial structure of a region: make it branch into new but related fields
- this type of policy takes the existing industrial structure at the regional level as a starting point
- no ‘one-size-fits-all’ policy: regions differ
  - no universal optimal policy model (no copying of best practices)
  - do not start from scratch: region-specific assets as building blocks
  - history matters: need for tailor-made policy strategies based on relatedness: focus on available options and probable outcomes of regional policy



# where to intervene in the regional industrial structure?





## 4. mechanisms and policy actions

- and how to intervene in the industrial structure of the region?
- regional policy can build on the mechanisms that diversify regions through relatedness
  1. entrepreneurship
  2. labour mobility
  3. collaboration networks
- these mechanisms connecting old and new sectors basically take place at the regional level: reduces the risk of leakage effects to other regions
- they have the potential to move regions in new growth paths while building on regional assets